

REMARKS

Reconsideration of this application, as amended, is respectfully requested.

In the Office Action, claims 1 and 3-36 were pending. Claims 1 and 3-36 have been rejected.

Claims 1, 15, 23, 35, and 36 have been amended. Claim 19 has been canceled. No claims have been added. Support for the amendments is found in the specification, the drawings, and in the claims as originally filed. Applicants submit that the amendments do not add new matter.

Rejections Under 35 U.S.C. § 103

Claims 1, 3, 8-11, 13-15, 18 and 19 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,704,879 to Parrish ("Parrish"), in view of U.S. Patent No. 6,785,829 to George, et al. ("George"), and U.S. Patent No. 6,476,800 to Millman ("Millman").

Applicants respectfully submit that Parrish does not teach or suggest a combination with George and Millman. Millman does not teach or suggest a combination with Parrish and George, and George does not teach or suggest a combination with Parrish and Millman. It would be impermissible hindsight, based on Applicants' own disclosure, to combine Parrish, George, and Millman.

Furthermore, even if Parrish, George, and Millman were combined, such a combination would lack informing by the graphics controller a Video Graphics Array Basic Input /Output System ("VGA BIOS ") with an indication of a change related to the system power supply, wherein the informing includes requesting a set of one or more preprogrammed available clock rates stored in the VGA BIOS, as recited in amended claim 1.

Parrish discloses dynamically controlling a power state of a graphics adapter. More specifically, Parrish discloses that the graphics adapter has a graphics controller, and a graphics BIOS to configure the adapter. In particular, Parrish discloses that

When the power state changes, the frequency of the oscillator 118 may be modified accordingly. A hardware device, such as the AC/DC converter 128, may generate a hardware interrupt in response to a change in the power state to invoke an interrupt handler, such as a BIOS routine. The interrupt handler may include instructions employing input/output (I/O) addressing techniques to notify the graphics adapter 110 of the change in the power state. The processor 102 may execute instructions of the interrupt handler to write data to an I/O address space. Essentially, the data is transmitted to a port that is mapped to a register 115 on the graphics adapter. The data in the register 115 may include indications of the power state of the computer system 100 including a residual power level, if using the battery pack 129. When data is stored in the register 115, a routine of the graphics BIOS 114 may be invoked to respond to the change in power supply by modifying the frequency of the oscillator 118.

(Parrish, col. 2, lines 46-65) (emphasis added)

Thus, Parrish merely discloses invoking of the routine of the graphics BIOS to respond to the change in the power supply. In contrast, amended claim 1 refers to informing a Video Graphics Array Basic Input /Output System ("VGA BIOS") with an indication of a change related to the system power supply, wherein the informing includes requesting a set of one or more preprogrammed available clock rates stored in the VGA BIOS.

Millman discloses adjusting a video refresh rate in response to power mode changes. More specifically, Millman discloses that the frequency of the video timing signal is adjusted in response to the switching between the power modes (col. 5, lines 32-60), and similarly to Parrish, fails to disclose informing a Video Graphics Array Basic Input /Output System ("VGA BIOS") with an indication of a change related to the system power supply, wherein the informing includes requesting a set of one or more preprogrammed available clock rates stored in the VGA BIOS, as recited in amended claim 1.

George discloses multiple operating frequencies in a processor. More specifically, George discloses changing the operating frequency of the processor in response of detecting the change in the power state (Abstract), and similarly to Parrish and Millman, fails to disclose informing a Video Graphics Array Basic Input /Output System ("VGA BIOS ") with an indication of a change related to the system power supply, wherein the informing includes requesting a set of one or more preprogrammed available clock rates stored in the VGA BIOS, as recited in amended claim 1.

Thus, neither Parrish, Millman, George, nor any combination thereof, discloses, teaches, or suggests such limitations of amended claim 1.

Therefore, Applicants respectfully submit that amended claim 1 is not obvious under 35 U.S.C. § 103(a) over Parrish, in view of George, and further in view of Millman.

Because claims 3-14 depend from amended claim 1, and add additional limitations, Applicants respectfully submit that claims 3-14 are not obvious under 35 U.S.C. § 103(a) over Parrish in view of George, and further in view of Millman.

Given that claims 23-36 contain related limitations, Applicants respectfully submit that claims 23-36 are not obvious under 35 U.S.C. § 103(a) over Parrish, in view of George, and further in view of Millman.

Amended claim 15 reads as follows:

A method of effecting power management of a graphics controller in an operating system comprising:

- programming a set of available clock frequencies and storing the set of the available clock frequencies in a Video Graphics Array Basic Input /Output System ("VGA BIOS ");

- detecting a change in a system power supply;

- notifying the graphics controller of the change;

- receiving an indication of power reduction in the graphics controller, wherein the receiving the indication includes receiving a request from the graphics controller for the set of preprogrammed available clock frequencies stored in the VGA BIOS;

- providing the set of available clock frequencies to the graphics controller, and

- adjusting through a voltage regulator a power supply voltage level supplied to the graphics controller in response to the receiving of the indication the power reduction in the graphics controller.

(Amended claim 15) (emphasis added)

As set forth above, Parrish merely discloses invoking of the graphics BIOS to respond to the change in the power supply (Parrish, col. 2, lines 46-65). In contrast, amended claim 15 refers to programming programming a set of available clock frequencies and storing the set of the available clock frequencies in a Video Graphics Array Basic Input /Output System ("VGA BIOS"); and receiving an indication of power reduction in the graphics controller, wherein the receiving the indication includes receiving a request from the graphics controller for the set of preprogrammed available clock frequencies stored in the VGA BIOS.

As set forth above, Millman teaches adjusting of a video refresh rate. George, in contrast, teaches multiple operating frequencies in a processor.

Thus, neither Parrish, George, Millman, nor any combination thereof discloses, teaches, or suggests the discussed limitations of amended claim 15.

Therefore, Applicants respectfully submit that amended claim 15 is not obvious under 35 U.S.C. § 103(a) over Parrish, in view of George, and further in view of Millman.

Because claims 16-22 depend from amended claim 15, and add additional limitations, Applicants respectfully submit that claims 16-22 are not obvious under 35 U.S.C. § 103(a) over Parrish in view of George, and further in view of Millman.

Claims 4, 5 and 12 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Parrish, in view of George and Millman and U.S. Patent No. 5,349,525 to Dunki-Jacobs, et al. ("Jacobs"). Claims 6, 7, 16 and 17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Parrish, in view of George and Millman and U.S. Patent No. 6,618,042 to Powell ("Powell"). Claims 12-22 and 36 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Parrish, in view of George and Millman and U.S. Patent No. 5,524,249 to

Suboh ("Suboh"). Claims 23-35 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over George, Millman, Powell, Jacobs and Suboh.

It is respectfully submitted that neither of references cited by the Examiner teaches or suggests a combination with each other.

Parrish teaches reducing the clock that is sent to the graphics adapter. George, in contrast, teaches multiple clocks of the processor. Jacobs, in contrast to George and Parrish, teaches an ultrasonic imaging system. Millman, in contrast, teaches adjusting of a video refresh rate. Powell, in contrast, teaches reducing brightness of a display. Saboh, in contrast, teaches inactivation of the pixel clock for the display. It would be impermissible hindsight, based on the Applicants' own disclosure, to combine the cited references.

Furthermore even if the cited references were combined, such a combination would lack the following limitations of amended claim 1: informing a Video Graphics Array Basic Input /Output System ("VGA BIOS") with an indication of a change related to the system power supply, wherein the informing includes requesting a set of one or more preprogrammed available clock rates stored in the VGA BIOS.

Therefore, Applicants respectfully submit that amended claim 1 is not obvious under 35 U.S.C. § 103(a) over the references cited by the Examiner.

Because claims 4, 5 and 12 depend from amended claim 1, and add additional limitations, Applicants respectfully submit that claims 4, 5 and 12 are not obvious under 35 U.S.C. § 103(a) over Parrish in view of George, in view of Millman, and further in view of Jacobs.

Because claims 6, 7, 16 and 17 contain related limitations, Applicants respectfully submit that claims 6, 7, 16 and 17 are not obvious under 35 U.S.C. § 103(a) over Parrish in view of George, in view of Millman, and further in view of Powell.

Because claims 12-22 and 36 contain related limitations, Applicants respectfully submit that claims 12-22 and 36 are not obvious under 35 U.S.C. § 103(a) over Parrish in view of George, in view of Millman, and further in view of Saboh.

Because claims 23-35 contain related limitations, Applicants respectfully submit that claims 23-35 are not obvious under 35 U.S.C. § 103(a) over George, in view of Millman, Powell, Jacobs, and further in view of Saboh.

CONCLUSION

It is respectfully submitted that in view of the amendments and arguments set forth herein, the applicable rejections and objections have been overcome. If there are any additional charges, please charge Deposit Account No. 02-2666 for any fee deficiency that may be due.


Respectfully submitted,

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